User Manual

USB2TCM interface

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Title: USB2TCM interface – User Manual
Revision: A
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File name: USB2TCM User Manual-3

Classification: Confidential
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1   Introduction

This document describes features and usage of USB2TCM interface (Figure 1.1) - easy to use USB Mass Storage device, which allows uploading images from PC to TCM module directly.
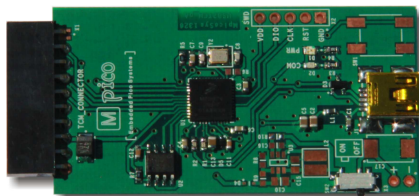

Figure 1.1: USB2TCM interface

2   Supported devices

USB2TCM was designed to interface PC and following TCM modules:

- TCM-P441_v1.1 (Figure 2.1)
- TCM-P74-110_v1.1 (Figure 2.2)
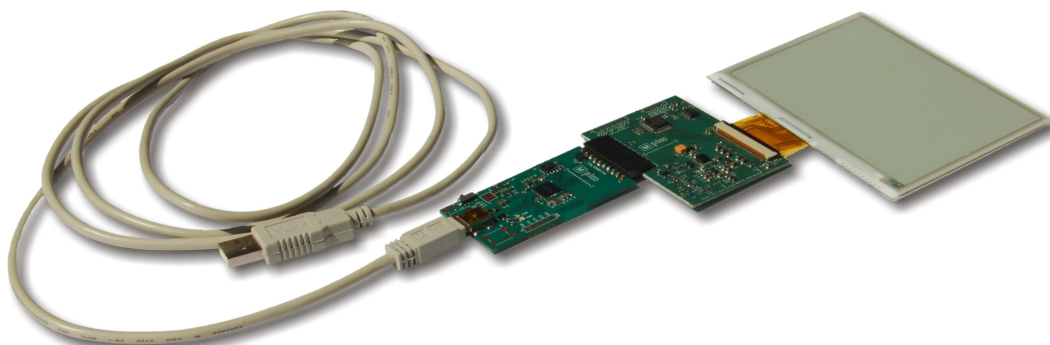- TCM-P74-220_v1.1 (Figure 2.2)

Figure 2.1: USB2TCM interface connected to TCM-P441

Figure 2.2: USB2TCM interface connected to TCM-P74

3 Supported operating system

Device was developed and tested on Microsoft Windows 7 Professional 32bit.

4 Usage

4.1 First connection

When connected to a PC the device behaves as a typical flash drive. At the first connection the device has a capacity of 76kB.

The device needs to be formatted under Windows environment. A prompt window should appear after the device is plugged-in in a USB port for the first time.
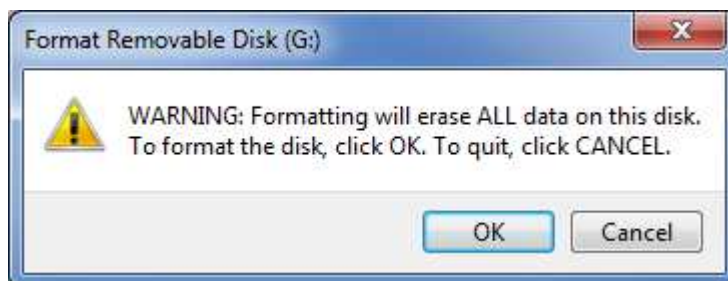

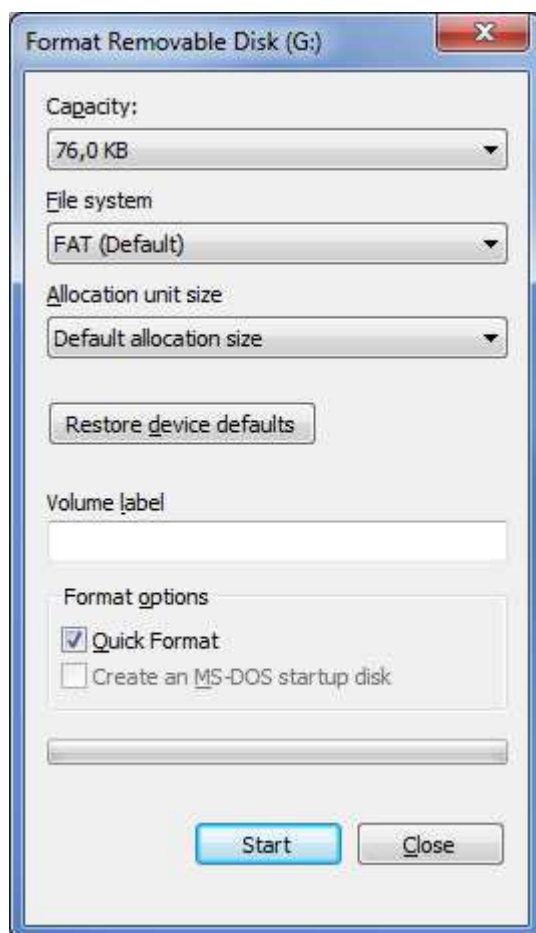*Figure 4.1: Warning before disk formatting*

Press Format disk button.

Figure 4.2: Format Disk options window

There is no need to change any option in the "Format Removable Disk" window. Press the Start button.

Figure 4.3: Windows warning before formatting

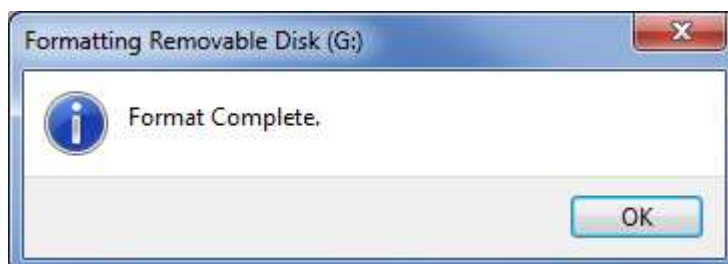Windows will warn, that all data will be erased. Press OK.

Figure 4.4: Format complete

After formatting device is visible as a 56kB flash drive.

4.2   Uploading image to TCM

Connected to the PC the USB2TCM device acts like a Flash Drive. Images in .EPD format[1] can be copied on that drive and will be automatically send to TCM, where the display will be updated.

Procedure is as follow:

1) Connect USB2TCM device to PCs USB port and to TCM module
2) Check whether PWR LED on USB2TCM module is on
3) Check whether USB2TCM device is properly recognized and mounted by Windows (it should be visible as Removable Disk with 56kB free space)
4) Copy an image in .EPD format suitable for TCM module used (P441 or P74), to the removable disk
5) After copying, the USB2TCM will forward this image to the TCM, which is indicated by the COM LED light (USB2TCM module will reconnect to the host PC during this operation)
6) If image was sent correctly, COM LED will turn OFF. If there was erroneous TCM module operation – COM LED will blink until device will be restarted.
7) Remove previously sent image from USB2TCM Removable Disk before uploading the new one.

NOTE: if the COM LED continues blinking the transfer from the USB2TCM Module to the TCM failed. The USB2TCM must be reset by power cycling – disconnecting and reconnecting the USB cable.

4.3   Image conversion to EPD format

Image in typical PC format like JPEG or PNG can be converted to EPD by using Convert tool provided by MpicoSys.

Package with tool should be unpacked in convenient location. Run Convert_v3 application. Figure 4.5 shows Convert application for TCM-P441. For TCM-P74 application looks the same only name in top bar is different - ConvertPDI74.

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1 "Timing Controller Solutions for Pervasive Displays 4.41″ and 7.4″ Panels – Developer's Guide", Document reference: 0874/13-MK, chapter 6. MpicoSys

Figure 4.5: Convert application for TCM-P441

To convert an image simply drag and drop it on Convert window area. Application will create directory with output files in the same location as the origin image.

Output folder contains four files:

- PDIxx_ImageName_1bit.epd – file with image converted to EPD format
- PDIxx_ImageName_1bit.h – C-type header file, an array with bytes corresponding to the image pixels
- PDIxx_ImageName_1bit.png – png image file in 1-bit colour scale – for preview on PC
- PDIxx_ImageName_4bit.png – png image file in 4-bit colour scale – for preview on PC

, where *xx* – display type, for which image is created (PDI74 or PDI441), *ImageName* – name of origin image file.

File, which is suitable to send to TCM is the one with extension *.epd*. Sample EPD files for TCM-P441 and TCM-P74 will be provided by MpicoSys.

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5 Troubleshooting

Issue	Possible causes	Fixes
USB2TCM device is not visible on PC	USB A-mini USB cable damage	Check whether PWR LED on USB2TCM board is on. Replace USB A-mini USB cable.
COM LED is constantly blinking	Problem with TCM module connection	Check connection between USB2TCM and TCM boards. Restart USB2TCM board by USB cable disconnecting and connecting again.
Picture on TCM display is distorted	EPD file uploaded to TCM is not appropriate for used TCM panel	Ensure, that EPD file is according to used panel. Use sample EPD files provided by MpicoSys to verify proper system operation.
EPD file can't be copied on USB2TCM drive – not enough space	USB2TCM memory is occupied	Delete previously send EPD file from USB2TCM removable disk.

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6 Revision History

Document Revision	Release Date	Document Status	Supersedes
A	12-08-2013	Draft	–

Table 6.1: Revision history

Document Revision	Change Log
A	Initial version

Table 6.2: Change log

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Draft

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